

REMARKS

Claims 1, 4, 5, 13, 16, 22, 23, 28, 32, 35, 36, 40, 43, 44, 46, 50, 51, 55, 60, 61, 65, 69, 70, 73, 76, 77, 91 and 97 are amended. Claims 3, 21, 34, 42, 49, 59, 68, and 75 are cancelled. Claims 1, 2, 4-20, 22-33, 35-41, 43-48, 50-58, 60-67, 69-74, 76-97 remain in the application for consideration. In view of the following remarks, Applicant respectfully requests withdrawal of the rejections.

Provisional Double Patenting Rejection

Claims 1-97 stand provisionally rejected under the judicially created doctrine of obviousness-type double over claims 1-103 of co-pending Application No. 09/746,923 (Parupudi et al., U.S. Pat. App. Pub. 2002/0120370) and claims 1-48 of co-pending Application No. 09/746,924 (Parupudi et al., U.S. Pat. App. Pub. 2002/0122055). Applicant respectfully requests that the Office hold this rejection in abeyance until the indication of allowable subject matter.

§ 112 Rejection

Claim 28 stands rejected under 35 U.S.C. § 112, second paragraph as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The Office points out that this claim recites the term “the resultant set”, and argues that there is insufficient antecedent basis for this term in the claim. Applicant has amended claim 28 to address this issue. Applicant thanks the examiner for the examiner’s attention to detail.

§§ 102 and 103 Rejections

Claims 1, 2, 6-20, 24-33, 37-41, 45-48, 52-58, 62-67, 71-74, 78-97, and 91-97 stand rejected under 35 U.S.C. §102(e) as being anticipated by U.S. Patent No. 6,125,446 to Olarig et al. (hereafter “Olarig”).

Claims 3-5, 21-23, 34-36, 42-44, 49-51, 59-61, 68-70, 75-77 88-90 stand rejected under U.S.C. §103(a) as being unpatentable over Olarig in view of U.S. Patent No. 6,104,344 to Wax et al. (hereinafter “Wax”).

Before undertaking a discussion regarding the substance of the Office’s rejections, the following discussion of Applicant’s disclosure, and the references to Olarig and Wax is included in order to assist the Office in appreciating the patentable distinctions between these references and the claimed subject matter in this application.

Applicant’s Disclosure

Aspects of Applicant’s disclosure are directed to context-aware computing systems and methods. Devices and methods are provided that are context-aware (in one example—location-aware) in that they provide for the application and enforcement of various policies as a function of context. Specifically, in at least some embodiments, computing devices are able to automatically determine their context (in one example, their location) by utilizing *one or more traversable hierarchical tree structures comprising individual nodes*. Each of these nodes is associated with a device context and each node is connected to at least one other node by a branch.

In at least some embodiments, an exemplary classification of nodes takes place on a physical level (e.g. physical locations such as political entities,

1 infrastructure entities and public places), as well as a non-physical level (e.g.
2 military APOs). This hierarchical nodal structure is referred to as the Master
3 World, and is a standardized view worldwide. Each node of the Master World has
4 various attributes associated with it that assist in context-aware computing. The
5 Master World is useful because it can be used to determine the relative location of
6 a place anywhere in the world and at any definable granularity.

7 In at least some embodiments, Secondary Worlds represent a powerful
8 computing mechanism whereby individual entities (such as businesses or
9 organizations) *can define their own particular worlds* that need not necessarily
10 conform to the Master World view of the world. That is, while the Master World
11 is essentially a physical hierarchical representation of the world, Secondary
12 Worlds can be physical *or logical representations* of each individual entity's world
13 view. In the described embodiment, each Secondary World has at least one node
14 that is linked with a node of the Master World. This gives the Secondary World a
15 context or location in the Master World. Also, in some context applications,
16 several secondary worlds may be accessed, each providing additional context
17 specific pieces of location data. The nodes of the Secondary World may or may
18 not have much context outside of the particular organization that defined the
19 Secondary World, since a Secondary World could be made either public or private.
20 Because there is a link into the Master World, the computing device is able to
21 derive its context (location) within both worlds. This enables the computing
22 device, and hence the user, to take advantage of goods and services that are
23 associated with the Secondary World, as well as participate in location-dependent
24 services that are consumable based upon the user's location in the Master World.

25 In at least some embodiments, once a given context is determined, a

1 collection of policies, *potentially from multiple different policy sources*, can be
2 evaluated to provide a resultant set of policies that apply to the given context. An
3 enterprise policy can be considered as a collection of rules established by the
4 enterprise and enforceable, relative to the enterprise's computing devices, to define
5 various parameters of the computing environment. System administrators can
6 now be given the opportunity to author and define a rich, robust, and flexible set
7 of policies that can be applied in many and varying contexts. *This constitutes a*
8 *noteworthy departure from the relatively inflexible systems in the past that*
9 *enabled policy definition based only upon user or device identity and/or perhaps*
10 *the device's static location.* The resultant set of policies is then enforced, typically
11 via the device's operating system. Policy enforcement can involve promulgating
12 new settings or state to applications that are executing on or off the device.
13 Advantageously, the devices and methodologies can adapt the resultant set of
14 policies as the device's context changes so that the policies can be dynamically
15 determined and enforced automatically as the device's context changes

17 The Olarig Reference

18 Olarig is directed to methods and systems for enabling or disabling
19 automatic encryption engines/algorithms using satellite positioning data (such as
20 Global Positioning Systems (GPS) or other non-GPS positioning systems like
21 LORAN, Eagle-Eye, etc.) for country or locale verification and compliance with
22 federal encryption export statutes. Specifically, a computer system receives
23 satellite position data and its encryption function can be enabled or disabled based
24 upon current location information. (See e.g. column 3, line 67 through column 4,
25 line 18, column 5: lines 26 through 28, lines 37 through 41, lines 51 through 67,

1 column 5 line 47 through 50).

2 Olarig additionally instructs that if current location information is received
3 from at least one worldwide positioning system, software executing on a device
4 may determine, *based upon received current location*, that certain programs
5 should be shutdown.

6 Accordingly, Olarig's methods and systems change operational features of
7 hardware and/or software based on what might be considered as flat location
8 information that is received.

9 10 The Wax Reference

11 Wax is directed to a system and methods for determining a geographical
12 location from a *measured wireless signal signature*. Wax instructs that its
13 systems and methods are applicable for generating calibration tables that are based
14 on the measurement of *wireless signal parameters and corresponding location*
15 *information*.

16 Wax instructs that to determine a geographical location from a measured
17 wireless signal signature, a calculation is made from the measured wireless signal
18 signature to provide a multi-dimensional signature vector. Each component of the
19 vector measures a degree of coincidence between the measured wireless signal
20 signature and a calibrated signal signature stored in a calibration table.

21 Wax matches the signature vector with vectors in a set of multi-
22 dimensional calibrated vectors and uses a procedure for searching a hierarchical
23 tree structure. However, Wax's hierarchical tree and its use thereof is very
24 different from the hierarchical tree disclosed in Applicant's disclosure.
25 Specifically, Wax's hierarchical tree structure is associated with a *finite set of*

1 **calibrated locations:** “a hierarchical tree structure is associated with the set of N
2 calibrated locations, as illustrated in FIG. 3.” (See column 7, lines 34 through 37).
3 This tree structure is composed of a number of nodes, each (except for the top
4 node) connected to one higher level node and each (except the bottom nodes)
5 connected to a number of lower level nodes. A node at the second-lowest level
6 contains the union of the points contained in the lower-level nodes connected to it.
7 A similar relationship holds between other nodes in the tree. Thus, the highest
8 node contains all N signature vectors in the calibration table, while the second-
9 highest nodes contain subsets of these N vectors.

10 Using well-known data clustering methods, Wax instructs that ***each***
11 ***signature vector is assigned to one leaf node at the lowest level of the tree.***
12 Nodes that cannot contain the best match vector are eliminated (using a well
13 known branch and bound algorithm which traverses the tree and eliminates nodes
14 that cannot contain the best match). Within the remaining nodes, a search
15 eliminates individual vectors that cannot be the best match vector and selects one
16 or more vectors in the set of multi-dimensional calibrated vectors, where the
17 matched vectors correspond to calibrated geographical locations.

18 **Claims Rejected over Olarig under §§ 102 and 103**

19 **Claim 1** has been amended, and as amended recites a computing device
20 comprising [added language appears in bold italics]:
21

- 22 • one or more processors;
- 23 • memory operably associated with the one or more processors;
- 24 • one or more applications loadable in the memory and executable
25 on the one or more processors; and
- the one or more processors being configured to:
 - receive context information from externally of the device,

the context information pertaining to one or more current device contexts;

- automatically determine one or more current contexts from the context information *using one or more hierarchical traversable tree structures, wherein the tree structures comprise individual nodes individual ones of which being associated with a context, wherein said one or more current contexts are determined by traversing at least one node on at least one of the tree structures, wherein individual nodes comprise an entity identification (EID) that is unique to the node, EIDs serving as a basis by which attributes can be assigned to goods or services associated with an individual node;*
- locally evaluate a collection of policies in connection with the one or more current contexts to provide a resultant set of policies; and
- enforce the resultant set of policies on the one or more applications.

In making the rejection, the Office argues that Olarig anticipates the subject matter in the claim. Applicant respectfully submits that Olarig does not disclose or suggest the subject matter of this claim, as amended. Specifically, Olarig does not disclose or suggest a computing device comprising *one or more hierarchical traversable tree structures on the device*.

In addition, Wax neither discloses nor suggests a hierarchical tree having nodes in which individual nodes comprise an entity identification (EID) that is unique to the node, with EIDs serving as a basis by which attributes can be assigned to goods or services associated with an individual node. Support for this subject matter can be found in the application on page 18, line 23 through page 19, line 20.

As neither reference discloses or suggests this claim's subject matter, this claim is allowable.

1 **Claims 2 and 4-12** depend from claim 1 and are allowable as depending
2 from an allowable base claim. These claims are also allowable for their own
3 recited features which, in combination with those recited in claim 1, are neither
4 disclosed nor suggested in the references of record, either singly or in combination
5 with one another. In addition, given the allowability of claim 1, the rejection of
6 claims 4 and 5 over the combination with Wax is not seen to add anything of
7 significance.

8 **Claim 13** has been amended, and as amended recites a computing device
9 comprising [added language appears in bold italics]:

- 10 • one or more processors;
- 11 • memory operably associated with the one or more processors;
- 12 • one or more applications loadable in the memory and executable on
13 the one or more processors; and
- 14 • the one or more processors being configured to:
 - 15 ○ receive context information from externally of the device, the
16 context information pertaining to a current device context ***and***
17 ***determine a current context using one or more hierarchical***
18 ***traversable tree structures on the device, wherein the tree***
19 ***structures comprise individual nodes each of which being***
20 ***associated with a device context, wherein said current***
21 ***context is determined by traversing at least one node on at***
22 ***least one of the tree structures, and wherein individual***
23 ***nodes comprise an entity identification (EID) that is unique***
24 ***to the node, EIDs serving as a basis by which attributes can***
25 ***be assigned to goods or services associated with an***
 individual node; and
 - enforce a set of policies on the one or more applications, the
 set of policies pertaining to a current context that is associated
 with the context information.

23 In making the rejection, the Office argues that Olarig anticipates the subject
24 matter in this claim. Applicant respectfully submits that Olarig does not disclose
25

1 or suggest the subject matter of this claim, as amended. As pointed out above,
2 Olarig does not disclose or suggest a computing device comprising *one or more*
3 *hierarchical traversable tree structures on the device*. Accordingly, this claim is
4 not anticipated by Orarig.

5 In addition, as pointed out above, Wax neither discloses nor suggests a
6 hierarchical tree having nodes in which individual nodes comprise an entity
7 identification (EID) that is unique to the node, with EIDs serving as a basis by
8 which attributes can be assigned to goods or services associated with an individual
9 node. Support for this subject matter can be found in the application on page 18,
10 line 23 through page 19, line 20.

11 As neither reference discloses or suggests this claim's subject matter, this
12 claim is allowable.

13 **Claims 14 and 15** depend from claim 13 and are allowable as depending
14 from an allowable base claim. These claims are also allowable for their own
15 recited features which, in combination with those recited in claim 13, are neither
16 disclosed nor suggested in the references of record, either singly or in combination
17 with one another.

18 **Claim 16** has been amended, and as amended recites a method of operating
19 a computing device comprising [added language appears in bold italics]:

- 20
- 21 • receiving context information from externally of a computing
22 device, the context information pertaining to a current device
23 context;
- 24 • automatically determining, with the computing device, a current
25 context using the context information,
- *wherein said act of automatically determining comprises:*

- *providing one or more hierarchical traversable tree structures on the device, the tree structures comprising individual nodes each of which being associated with a device context, wherein individual nodes comprise an entity identification (EID) that is unique to the node, EIDs serving as a basis by which attributes can be assigned to goods or services associated with an individual node; and*
- *traversing at least one node on at least one of the tree structures to provide the current context;*
- evaluating a collection of policies in connection with the current context to provide a resultant set of policies; and
- enforcing the resultant set of policies on one or more applications that are executable by the computing device.

In making the rejection, the Office argues that Olarig anticipates the subject matter in this claim. Applicant respectfully submits that Olarig does not disclose or suggest the subject matter of this claim, as amended. Specifically, Olarig does not disclose or suggest a method of operating a computing device comprising automatically determining a current context by providing one or more hierarchical traversable tree structures on the device, where the tree structures comprise individual nodes having an entity identification (EID) that is unique to the node, and which serves as a basis by which attributes can be assigned to goods or services associated with an individual node

In addition, as pointed out above, Wax neither discloses nor suggests any such feature. Accordingly, this claim is allowable.

Claims 17-20 and 22-27 depend from claim 16 and are allowable as depending from an allowable base claim. These claims are also allowable for their own recited features which, in combination with those recited in claim 16, are neither disclosed nor suggested in the references of record, either singly or in combination with one another. In addition, given the allowability of claim 16, the

1 rejection of claims 22 and 23 over the combination with Wax is not seen to add
2 anything of significance.

3 **Claim 28** has been amended, and as amended recites a method of operating
4 a computing device comprising [added language appears in bold italics]:

- 5
- 6 • receiving context information from externally of a computing device, the context information pertaining to a current device context;
- 7 • *automatically determining, with the computing device, a current context using the context information;*
- 8 • *wherein said act of automatically determining comprises:*
 - 9 ○ *providing one or more hierarchical traversable tree structures on the device, the tree structures comprising individual nodes each of which being associated with a device context, wherein individual nodes comprise an entity identification (EID) that is unique to the node, EIDs serving as a basis by which attributes can be assigned to goods or services associated with an individual node; and*
 - 10 ○ *traversing at least one node on at least one of the tree structures to provide the current context; and*
- 11 • enforcing *a set of policies, which are the result of a collection of policies in connection with the current device context*, on one or
12 more applications that are executable by the computing device, the
13 resultant set of policies pertaining to a context that is associated with
14 the context information that is received.
- 15
- 16
- 17
- 18

19 In making the rejection, the Office argues that Olarig anticipates the subject
20 matter in the claim. Applicant respectfully submits that Olarig does not disclose
21 or suggest the subject matter of this claim, as amended. Specifically, as pointed
22 out above, Olarig does not disclose or suggest a method of operating a computing
23 device comprising automatically determining a current context by providing one
24 or more hierarchical traversable tree structures on the device.

25 In addition, as pointed out above, Wax neither discloses nor suggests a

1 hierarchical tree having nodes in which individual nodes comprise an entity
2 identification (EID) that is unique to the node, with EIDs serving as a basis by
3 which attributes can be assigned to goods or services associated with an individual
4 node. Support for this subject matter can be found in the application on page 18,
5 line 23 through page 19, line 20.

6 As neither reference discloses or suggests this claim's subject matter, this
7 claim is allowable.

8 **Claims 29-31** depend from claim 28 and are allowable as depending from
9 an allowable base claim. These claims are also allowable for their own recited
10 features which, in combination with those recited in claim 28, are neither disclosed
11 nor suggested in the references of record, either singly or in combination with one
12 another.

13 **Claim 32** has been amended, and as amended recites a computing device
14 comprising [added language appears in bold italics]:

- 15
- 16 • one or more processors;
- 17 • memory operably associated with the one or more processors;
- 18 • one or more applications loadable in the memory and executable on
the one or more processors; and
- 19 • the one or more processors being configured to:
 - 20 ○ receive context information from externally of the device, the
context information pertaining to a current device context;
 - 21 ○ automatically determine a current context from the context
information ***using one or more hierarchical traversable tree
22 structures on the device, the tree structures comprising
23 individual nodes each of which being associated with a
24 device context, the device being configured to determine its
25 current context by traversing at least one node on at least
one of the tree structures, wherein individual nodes
comprise an entity identification (EID) that is unique to the
node, EIDs serving as a basis by which attributes can be
assigned to goods or services associated with an individual***

node;

- locally evaluate a collection of policies in connection with the current context to provide a resultant set of policies;
- enforce the resultant set of policies on the one or more applications;
- responsive to receiving context information that indicates a change of current context:
 - locally re-evaluate the collection of policies to provide a new resultant set of policies; and
 - enforce the new resultant set of policies on the one or more applications.

In making the rejection, the Office argues that Olarig anticipates the subject matter in the claim. Applicant respectfully submits that Olarig does not disclose or suggest the subject matter of this claim, as amended. As pointed out above, Olarig does not disclose or suggest a computing device comprising *one or more hierarchical traversable tree structures on the device*.

In addition, as pointed out above, Wax neither discloses nor suggests a hierarchical tree having nodes in which individual nodes comprise an entity identification (EID) that is unique to the node, with EIDs serving as a basis by which attributes can be assigned to goods or services associated with an individual node. Support for this subject matter can be found in the application on page 18, line 23 through page 19, line 20.

As neither reference discloses or suggests this claim's subject matter, this claim is allowable.

Claims 33 and 35-39 depend from claim 32 and are allowable as depending from an allowable base claim. These claims are also allowable for their own recited features which, in combination with those recited in claim 32 are neither disclosed nor suggested in the references of record, either singly or in

1 combination with one another. In addition, given the allowability of claim 32, the
2 rejection of claims 35 and 36 over the combination with Wax is not seen to add
3 anything of significance.

4 **Claim 40** has been amended, and as amended recites a method of operating
5 a computing device comprising [added language appears in bold italics]:

- 6
- 7 • wirelessly receiving context information from externally of a
- 8 computing device, the context information pertaining to a current
- 9 device context;
- 10 • automatically determining, with the computing device, a current
- 11 context using the context information;
- 12 • *wherein said act of automatically determining comprises:*
 - 13 ○ *providing one or more hierarchical traversable tree*
 - 14 *structures on the device, the tree structures comprising*
 - 15 *individual nodes each of which being associated with a*
 - 16 *device context, wherein individual nodes comprise an entity*
 - 17 *identification (EID) that is unique to the node, EIDs serving*
 - 18 *as a basis by which attributes can be assigned to goods or*
 - 19 *services associated with an individual node; and*
 - 20 ○ *traversing at least one node on at least one of the tree*
 - 21 *structures to provide the current context;*
- 22 • locally evaluating, with the computing device, a collection of
- 23 policies in connection with the current context to provide a resultant
- 24 set of policies;
- 25 • enforcing the resultant set of policies on one or more applications
- that are executable by the computing device;
- determining whether the device's current context has changed and if
- so, automatically determining a new current context using received
- context information;
- responsive to determining the new current context, locally re-
- evaluating, with the computing device, the collection of policies to
- provide a new resultant set of policies for the new current context;
- and
- enforcing the new resultant set of policies on the one or more
- applications.

25 In making the rejection, the Office argues that Olarig anticipates the subject

1 matter in the claim. Applicant respectfully submits that Olarig does not disclose
2 or suggest the subject matter of this claim, as amended.

3 In addition, as pointed out above, Wax neither discloses nor suggests a
4 hierarchical tree having nodes in which individual nodes comprise an entity
5 identification (EID) that is unique to the node, with EIDs serving as a basis by
6 which attributes can be assigned to goods or services associated with an individual
7 node. Support for this subject matter can be found in the application on page 18,
8 line 23 through page 19, line 20.

9 As neither reference discloses or suggests this claim's subject matter, this
10 claim is allowable.

11 **Claims 41 and 43-45** depend from claim 40 and are allowable as
12 depending from an allowable base claim. These claims are also allowable for their
13 own recited features which, in combination with those recited in claim 40 are
14 neither disclosed nor suggested in the references of record, either singly or in
15 combination with one another. In addition, given the allowability of claim 40, the
16 rejection of claims 43 and 44 over the combination with Wax is not seen to add
17 anything of significance.

18 **Claim 46** has been amended, and as amended recites a computing device
19 comprising [added language appears in bold italics]:

- 20
- 21 • one or more processors;
- 22 • memory operably associated with the one or more processors;
- 23 • one or more applications loadable in the memory and executable on
24 the one or more processors; and
- 25 • the one or more processors being configured to:
 - receive location information pertaining to a current device
location;
 - automatically determine a current location from the location

1 information *using one or more hierarchical traversable tree*
2 *structures on the device, the tree structures comprising*
3 *individual nodes each of which being associated with a*
4 *device location, the device being configured to determine its*
5 *current location by traversing at least one node on at least*
6 *one of the tree structures, wherein individual nodes*
7 *comprise an entity identification (EID) that is unique to the*
8 *node, EIDs serving as a basis by which attributes can be*
9 *assigned to goods or services associated with an individual*
10 *node;*

- 11 ○ locally evaluate a collection of policies in connection with the
- 12 current location to provide a resultant set of policies; and
- 13 ○ enforce the resultant set of policies on the one or more
- 14 applications.

15 In making the rejection, the Office argues that Olarig anticipates the subject
16 matter in the claim. Applicant respectfully submits that Olarig does not disclose
17 or suggest the subject matter of this claim, as amended.

18 In addition, as pointed out above, Wax neither discloses nor suggests a
19 hierarchical tree having nodes in which individual nodes comprise an entity
20 identification (EID) that is unique to the node, with EIDs serving as a basis by
21 which attributes can be assigned to goods or services associated with an individual
22 node. Support for this subject matter can be found in the application on page 18,
23 line 23 through page 19, line 20.

24 As neither reference discloses or suggests this claim's subject matter, this
25 claim is allowable.

Claims 47, 48 and 50-54 depend from claim 46 and are allowable as
depending from an allowable base claim. These claims are also allowable for their
own recited features which, in combination with those recited in claim 46 are
neither disclosed nor suggested in the references of record, either singly or in
combination with one another. In addition, given the allowability of claim 46, the

1 rejection of claims 50 and 51 over the combination with Wax is not seen to add
2 anything of significance.

3 **Claim 55** has been amended, and as amended recites a method of operating
4 a computing device comprising [added language appears in bold italics]:

- 5 • receiving location information pertaining to a current device
- 6 location;
- 7 • automatically determining, with the computing device, a current
- 8 location using the location information;
- 9 • *wherein said act of automatically determining comprises:*
 - 10 ○ *providing one or more hierarchical traversable tree*
 - 11 *structures on the device, the tree structures comprising*
 - 12 *individual nodes each of which being associated with a*
 - 13 *device location, wherein individual nodes comprise an entity*
 - 14 *identification (EID) that is unique to the node, EIDs serving*
 - 15 *as a basis by which attributes can be assigned to goods or*
 - 16 *services associated with an individual node; and*
 - 17 ○ *traversing at least one node on at least one of the tree*
 - 18 *structures to provide the current location;*
- 19 • locally evaluating, with the computing device, a collection of
- 20 policies in connection with the current location to provide a resultant
- 21 set of policies; and
- 22 • enforcing the resultant set of policies on one or more applications
- 23 that are executable by the computing device.
- 24
- 25

18 In making the rejection, the Office argues that Olarig anticipates the subject
19 matter in the claim. Applicant respectfully submits that Olarig does not disclose
20 or suggest the subject matter of this claim, as amended.

21 In addition, as pointed out above, Wax neither discloses nor suggests a
22 hierarchical tree having nodes in which individual nodes comprise an entity
23 identification (EID) that is unique to the node, with EIDs serving as a basis by
24 which attributes can be assigned to goods or services associated with an individual
25 node. Support for this subject matter can be found in the application on page 18,

1 line 23 through page 19, line 20.

2 As neither reference discloses or suggests this claim's subject matter, this
3 claim is allowable.

4 **Claims 56-58 and 60-64** depend from claim 55 and are allowable as
5 depending from an allowable base claim. These claims are also allowable for their
6 own recited features which, in combination with those recited in claim 55 are
7 neither disclosed nor suggested in the references of record, either singly or in
8 combination with one another. In addition, given the allowability of claim 55, the
9 rejection of claims 60 and 61 over the combination with Wax is not seen to add
10 anything of significance.

11 **Claim 65** has been amended, and as amended recites a computing device
12 comprising [added language appears in bold italics]:

- 13
- 14 • one or more processors;
- 15 • memory operably associated with the one or more processors;
- 16 • one or more applications loadable in the memory and executable on
the one or more processors; and
- 17 • the one or more processors being configured to:
 - 18 ○ receive location information pertaining to a current device
19 location;
 - 20 ○ automatically determine a current location from the location
21 information *using one or more hierarchical traversable tree*
22 *structures on the device, the tree structures comprising*
23 *individual nodes each of which being associated with a*
24 *device location, the device being configured to determine its*
25 *current location by traversing at least one node on at least*
one of the tree structures, wherein individual nodes
comprise an entity identification (EID) that is unique to the
node, EIDs serving as a basis by which attributes can be
assigned to goods or services associated with an individual
node;
 - locally evaluate a collection of policies in connection with the
current location to provide a resultant set of policies;

- 1 ⊖ enforce the resultant set of policies on the one or more
- 2 applications; and
- 3 ○ responsive to receiving location information that indicates a
- 4 change of current location:
- 5 ▪ locally re-evaluate the collection of policies to provide
- 6 a new resultant set of policies; and
- 7 ▪ enforce the new resultant set of policies on the one or
- 8 more applications.

9 In making the rejection, the Office argues that Olarig anticipates the subject
10 matter in the claim. Applicant respectfully submits that Olarig does not disclose
11 or suggest the subject matter of this claim, as amended.

12 In addition, as pointed out above, Wax neither discloses nor suggests a
13 hierarchical tree having nodes in which individual nodes comprise an entity
14 identification (EID) that is unique to the node, with EIDs serving as a basis by
15 which attributes can be assigned to goods or services associated with an individual
16 node. Support for this subject matter can be found in the application on page 18,
17 line 23 through page 19, line 20.

18 As neither reference discloses or suggests this claim's subject matter, this
19 claim is allowable.

20 **Claims 66, 67 and 69-72** depend from claim 65 and are allowable as
21 depending from an allowable base claim. These claims are also allowable for their
22 own recited features which, in combination with those recited in claim 65 are
23 neither disclosed nor suggested in the references of record, either singly or in
24 combination with one another. In addition, given the allowability of claim 65, the
25 rejection of claims 69 and 70 over the combination with Wax is not seen to add
 anything of significance.

1 **Claim 73** has been amended, and as amended recites a method of operating
2 a computing device comprising [added language appears in bold italics]:

- 3
- 4 • wirelessly receiving location information from externally of a
5 computing device, the location information pertaining to a current
6 device location;
- 7 • automatically determining, with the computing device, a current
8 location using the location information;
- 9 • *wherein said act of automatically determining comprises:*
 - 10 ○ *providing one or more hierarchical traversable tree*
11 *structures on the device, the tree structures comprising*
12 *individual nodes each of which being associated with a*
13 *device location, wherein individual nodes comprise an entity*
14 *identification (EID) that is unique to the node, EIDs serving*
15 *as a basis by which attributes can be assigned to goods or*
16 *services associated with an individual node; and*
 - 17 ○ *traversing at least one node on at least one of the tree*
18 *structures to provide the current location;*
- 19 • locally evaluating, with the computing device, a collection of
20 policies in connection with the current location to provide a resultant
21 set of policies;
- 22 • enforcing the resultant set of policies on one or more applications
23 that are executable by the computing device;
- 24 • determining whether the device's current location has changed and if
25 so, automatically determining a new current location using received
 location information;
- responsive to determining the new current location, locally re-
 evaluating, with the computing device, the collection of policies to
 provide a new resultant set of policies for the new current location;
 and
- enforcing the new resultant set of policies on the one or more
 applications.

22 In making the rejection, the Office argues that Olarig anticipates the subject
23 matter in the claim. Applicant respectfully submits that Olarig does not disclose
24 or suggest the subject matter of this claim, as amended.

25 In addition, as pointed out above, Wax neither discloses nor suggests a

1 hierarchical tree having nodes in which individual nodes comprise an entity
2 identification (EID) that is unique to the node, with EIDs serving as a basis by
3 which attributes can be assigned to goods or services associated with an individual
4 node. Support for this subject matter can be found in the application on page 18,
5 line 23 through page 19, line 20.

6 As neither reference discloses or suggests this claim's subject matter, this
7 claim is allowable.

8 **Claims 74 and 76-78** depend from claim 73 and are allowable as
9 depending from an allowable base claim. These claims are also allowable for their
10 own recited features which, in combination with those recited in claim 73 are
11 neither disclosed nor suggested in the references of record, either singly or in
12 combination with one another. In addition, given the allowability of claim 73, the
13 rejection of claims 76 and 77 over the combination with Wax is not seen to add
14 anything of significance.

15 **Claim 79** recites a computing device comprising:

- 16
- 17 • one or more processors;
- 18 • memory operably associated with the one or more processors;
- 19 • one or more applications loadable in the memory and executable on
20 the one or more processors; and
- 21 • the one or more processors being configured to:
 - 22 ○ *collect policies from multiple different policy sources to provide*
23 *a collection of policies, the policies being expressed in terms of*
24 *context dependencies associated with multiple different device*
25 *contexts;*
 - receive context information from externally of the device, the
context information pertaining to a current device context;
 - automatically determine a current context from the context
information;
 - locally evaluate the collection of policies in connection with the
current context to provide a resultant set of policies; and

- enforce the resultant set of policies on the one or more applications.

In making the rejection, the Office argues that Olarig anticipates the subject matter in the claim. Applicant respectfully submits that Olarig does not disclose or suggest the subject matter of this claim. Specifically, Olarig discloses methods and systems for changing operational features of hardware and/or software based upon current location information received from at least one worldwide positioning system (such as GPS or LORAN). Nowhere does Olarig disclose or suggest a computing device comprising processors configured to *collect policies from multiple different policy sources to provide a collection of policies*. Accordingly, this claim is allowable.

Claims 80 and 81 depend from claim 79 and are allowable as depending from an allowable base claim. These claims are also allowable for their own recited features which, in combination with those recited in claim 79, are neither disclosed nor suggested in the references of record, either singly or in combination with one another.

Claim 82 recites a method of operating a computing device comprising:

- *collecting policies from multiple different policy sources to provide a collection of policies, the policies being expressed in terms of context dependencies associated with multiple different device contexts;*
- receiving context information from externally of a computing device, the context information pertaining to a current device context;
- automatically determining a current context from the context information;
- locally evaluating the collection of policies in connection with the current context to provide a resultant set of policies; and

- enforcing the resultant set of policies on the device.

In making the rejection, the Office argues that Olarig anticipates the subject matter in the claim. Applicant submits that Olarig does not disclose or suggest the subject matter of this claim. As noted above, Olarig does not disclose or suggest a method of operating computing device comprising *collecting policies from multiple different policy sources to provide a collection of policies*. Accordingly, this claim is allowable.

Claims 83-87 depend from claim 82 and are allowable as depending from an allowable base claim. These claims are also allowable for their own recited features which, in combination with those recited in claim 82, are neither disclosed nor suggested in the references of record, either singly or in combination with one another.

Claim 88 recites a method of providing policies for enforcement on computing devices comprising:

- providing a representation of location using *multiple* hierarchical tree structures each of which comprising multiple nodes, *each node representing a location that can be either a physical location or a logical location*, the tree structures comprising at least one link between them that can serve as a basis for a traversal operation that traverses the multiple tree structures to derive a computing device location; and
- expressing multiple policies as a function of the representation of location.

In making out the rejection of this claim, the Office argues that Olarig discloses the use of GPS for determining current context of a device, but does not disclose determining the current context by traversing a hierarchical tree structure

1 providing an abstract representation of context. Applicant agrees.

2 The Office then relies on Wax and argues that it discloses a method for
3 determining geographical location for a wireless device by searching a hierarchical
4 tree structure where each node of the tree is associated with a particular
5 context/location. Based on this, the Office concludes that it would have been
6 obvious to one of ordinary skill in the art at the time of the invention to combine
7 the teachings of Olarig and Wax to provide a system of enforcing policies on a
8 device based on a device location determination, the determination made by
9 traversing a hierarchical tree structure providing an abstract representation of
10 context. The Office further argues that Wax provides motivation for using
11 hierarchical trees to determine geographical location because it discloses a more
12 efficient method of determining geographical location of a wireless device.

13 Applicant disagrees with the Office's obviousness rejections and
14 respectfully submits that neither Wax nor Olarig disclose using multiple
15 hierarchical tree structures each of which comprising multiple nodes, each node
16 representing a *location that can be either a physical location or a logical*
17 *location*. Specifically, Wax does not disclose a hierarchical tree having a node
18 that can represent a physical or logical location. Rather, Wax's nodes are
19 associated with a *finite set of calibrated physical locations*: "a hierarchical tree
20 structure is associated with the set of N calibrated locations, as illustrated in FIG.
21 3." (See column 7, lines 34 through 37). Nowhere does Wax disclose or suggest
22 nodes that represent logical locations.

23 Accordingly, the Office has not established a *prima facie* case of
24 obviousness and this claim is allowable.

25 **Claim 89** depends from claim 88 and is allowable as depending from an

1 allowable base claim. This claim is also allowable for its own recited features
2 which, in combination with those recited in claim 88 are neither disclosed nor
3 suggested in the references of record, either singly or in combination with one
4 another. In addition, given the allowability of claim 88, the rejection of claim 89
5 over the combination with Wax is not seen to add anything of significance.

6 **Claim 90** recites a method of providing policies for enforcement on
7 computing devices comprising:

- 8
9 • expressing multiple policies as a function of an abstract
10 representation of location that uses **multiple** hierarchical tree
11 structures each of which comprising multiple nodes, **each node**
12 **representing a location that can be either a physical location or a**
13 **logical location**, the tree structures comprising at least one link
14 between them that can serve as a basis for a traversal operation that
15 traverses the multiple tree structures to derive a computing device
16 location; and
- 17 • making the multiple policies available to computing devices.

18 In making out the rejection of this claim, the Office concludes that it would
19 have been obvious to one of ordinary skill in the art at the time of the invention to
20 combine the teachings of Olarig and Wax to to render the subject matter of this
21 claim obvious. Applicant disagrees with the Office's obviousness rejections.

22 As pointed out above, neither reference discloses or suggests using **multiple**
23 hierarchical tree structures with each tree structure comprising multiple nodes,
24 each node representing a location that can be either a physical location **or a logical**
25 **location**. Accordingly, the Office has not established a *prima facie* case of
obviousness and this claim is allowable.

Claim 91 has been amended, and as amended recites a computer

1 architecture comprising [added language appears in bold italics]:

- 2 • a context service that provides context information or context change
- 3 events that pertain to the context of a computing device;
- 4 • ***wherein said context service determines context using one or more***
- 5 ***hierarchical traversable tree structures, the tree structures***
- 6 ***comprising individual nodes each of which being associated with a***
- 7 ***device context, the context service being configured to determine***
- 8 ***context by traversing at least one node on at least one of the tree***
- 9 ***structures, wherein individual nodes comprise an entity***
- 10 ***identification (EID) that is unique to the node, EIDs serving as a***
- 11 ***basis by which attributes can be assigned to goods or services***
- 12 ***associated with an individual node; and***
- 13 • a policy engine communicatively linked with the context service and
- 14 configured to:
 - 15 ○ receive context information or context change events from the
 - 16 context service;
 - 17 ○ evaluate a collection of policies to provide a resultant set of
 - 18 policies responsive to the context information or context
 - 19 change events; and
 - 20 ○ enforce the resultant set of policies on a computing device.

21 In making out the rejection of this claim, the Office argues that Olarig
22 anticipates the subject matter in the claim. Applicant respectfully submits that
23 Olarig does not disclose or suggest the subject matter of this claim, as amended.
24 As pointed out above, Olarig does not disclose or suggest a computer architecture
25 comprising a context service having ***one or more hierarchical traversable tree***
structures.

21 In addition, as pointed out above, Wax neither discloses nor suggests a
22 hierarchical tree having nodes in which individual nodes comprise an entity
23 identification (EID) that is unique to the node, with EIDs serving as a basis by
24 which attributes can be assigned to goods or services associated with an individual
25 node. Support for this subject matter can be found in the application on page 18,

1 line 23 through page 19, line 20.

2 As neither reference discloses or suggests this claim's subject matter, this
3 claim is allowable.

4 **Claims 92-96** depend from claim 91 and are allowable as depending from
5 an allowable base claim. These claims are also allowable for their own recited
6 features which, in combination with those recited in claim 91, are neither disclosed
7 nor suggested in the references of record, either singly or in combination with one
8 another.

9 **Claim 97** has been amended, and as amended recites a computer system
10 comprising [added language appears in bold italics]:

- 11 • a context service that provides context information or context change
- 12 events that pertain to the context of a computing device;
- 13 • *wherein said context service determines context using one or more*
- 14 *hierarchical traversable tree structures, the tree structures*
- 15 *comprising individual nodes each of which being associated with a*
- 16 *device context, the context service being configured to determine*
- 17 *context by traversing at least one node on at least one of the tree*
- 18 *structures, wherein individual nodes comprise an entity*
- 19 *identification (EID) that is unique to the node, EIDs serving as a*
- 20 *basis by which attributes can be assigned to goods or services*
- 21 *associated with an individual node; and*
- 22 • a policy engine communicatively linked with the context service, but
- 23 remote from the computing device, and configured to:
 - 24 ○ receive context information or context change events from the
 - 25 context service;
 - evaluate a collection of policies to provide a resultant set of
 - policies responsive to the context information or context
 - change events; and
 - provide the resultant set of policies to the computing device.

24 In making out the rejection of this claim, the Office argues that Olarig
25 anticipates the subject matter in the claim. Applicant respectfully submits that

1 Olarig does not disclose or suggest the subject matter of this claim, as amended.
2 As pointed out above, Olarig does not disclose or suggest a computer architecture
3 comprising a context service having *one or more hierarchical traversable tree*
4 *structures*.

5 In addition, as pointed out above, Wax neither discloses nor suggests a
6 hierarchical tree having nodes in which individual nodes comprise an entity
7 identification (EID) that is unique to the node, with EIDs serving as a basis by
8 which attributes can be assigned to goods or services associated with an individual
9 node. Support for this subject matter can be found in the application on page 18,
10 line 23 through page 19, line 20.

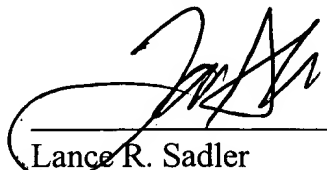
11 As neither reference discloses or suggests this claim's subject matter, this
12 claim is allowable.

13
14 **Conclusion**

15 All of the claims are in condition for allowance. Applicant respectfully
16 requests a Notice of Allowability be issued forthwith. If the Office's next
17 anticipated action is to be anything other than issuance of a Notice of Allowability,
18 Applicant respectfully requests a telephone call for the purpose of scheduling an
19 interview.

20
21 Respectfully Submitted,

22
23 Dated: 9/24/04

24 By: 
25 Lance R. Sadler
Reg. No. 38,605
(509) 324-9256